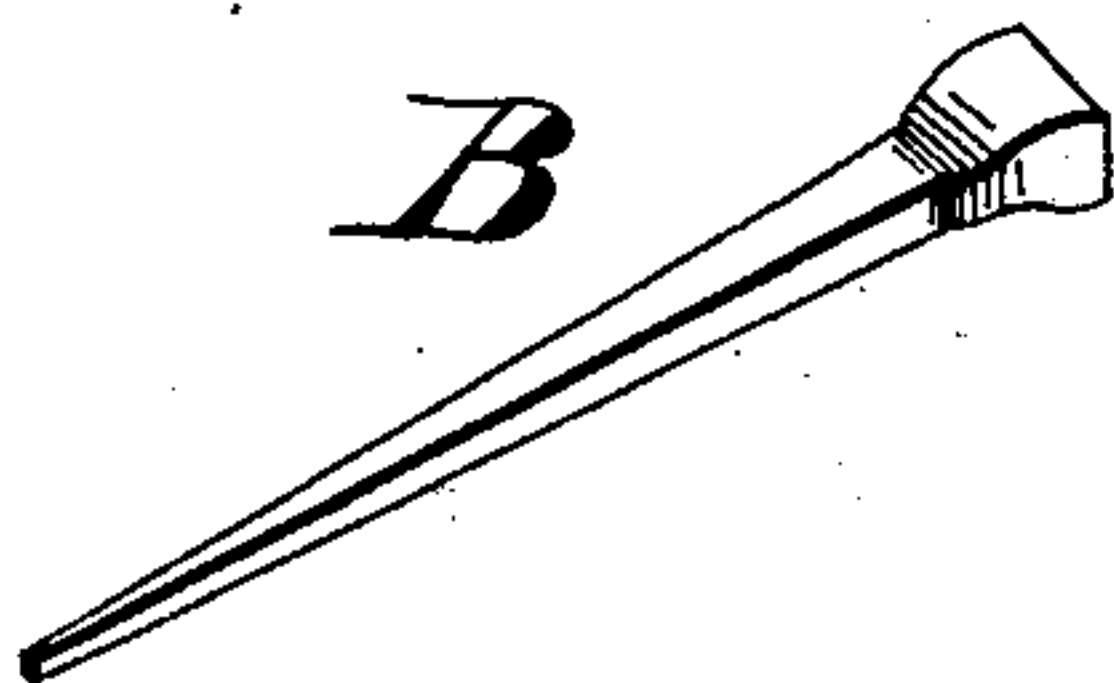
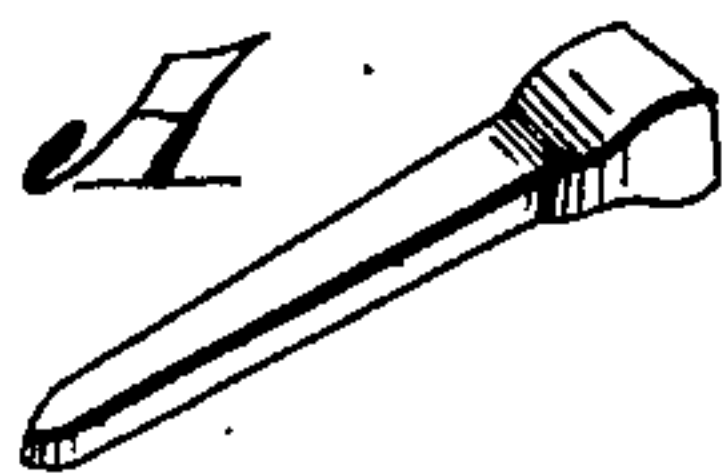


A. M. POLSEY.
MAKING HORSESHOE NAILS.

No. 92,355.

Patented July 6, 1869.



Witnesses.

J. B. Kidder
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Inventor.

Arton M. Polsey
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UNITED STATES PATENT OFFICE.

A. M. POLSEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO T. H. FULLER.

IMPROVED METHOD OF MAKING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. 92,355, dated July 6, 1869.

To all whom it may concern:

Be it known that I, A. M. POLSEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Manufacture of Nails; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

This invention consists in a metallic nail, as a new article of manufacture, in which the head is left in that condition of softness produced by hot-working a plate or strip of metal, and in that condition of form which results from the combined operation of hot working or rolling said plate, and of punching or cutting a blank therefrom, while the shank is left in that condition of hardness, smoothness, and freedom from scale and rigidity which is produced by rolling the cut shank substantially throughout, while cold, from the junction of the shank with the head to the point, such nails being superior for use with the shoes and hoofs of animals to any others ever before produced, in that the whole shank or body of the nail is hardened in a constantly-increasing ratio from the head to the point, the rigidity of the nail, however, remaining nearly uniform throughout the shank, because the cross-section of the nail beyond the head is diminished in area about as the hardness and density of the metal are increased by cold-rolling.

The softness of the heads of the nails of my invention causes them to yield under the action of the hammer in driving, and fit and embed in the grooves made in animals' shoes. The medium hardness of the shank near the head is sufficient to keep the nail from bending there, though not so hard as to prevent it from conforming itself, as it is driven, to the nail-hole made through the shoe for its reception; and the point end of the nail is so hard and rigid as to retain its form and the direction given the nail in driving.

In preparing the metal from which the blanks are to be cut or punched I produce, as has heretofore been done, on bars or strips of iron, (which should be of the best quality,) by hot-rolling in suitably ribbed or grooved rolls, projections on one side of each bar or strip, the projections being produced across the width of the bars and across the grain or

fibers of the metal, so that the fibers of the metal in the blanks and nails to be produced shall be disposed longitudinally therein.

The ribs formed on the bars are preferably of such width as will suffice to produce the lengths of two blank or nail heads, and the projection and form of the ribs are to be those of the finished heads of the nails.

The spaces between the projections on the ribbed bars are to equal in width the length of the shank of the nail-blank to be produced, the metal in said spaces being of the thickness desired for the thickness of the nail-blank shanks before they are reduced by cold-rolling into nails. These bars are then cut into blanks like those shown at A in the drawings by means of suitable cutters or punches and dies. From such blanks nails like those shown at B are produced by cold-rolling the whole shank or body of the blank except the head, and from the head to the point in a set of roller-dies, which leave the head unwrought.

The blank seen at A is made with the sides of its shank nearly parallel, and of such size near the head as to require but a slight amount of compression and elongation, the compression and elongation of the metal increasing toward the point.

The nails of my invention are of uniform weight and size for each grade, and have a fine smooth surface, which, to a great extent, prevents rusting, and the usual splitting and mutilation of the hoof, and, as they drive very easily, considerable time is saved by their employment. Experience in their use shows that they combine strength and tenacity with sufficient stiffness to allow them to drive without bending, and ductility enough to bear the finest clinching.

I claim as a new article of manufacture—

A nail made by punching or cutting from hot-rolled ribbed bars of metal a headed blank, substantially as described, and by elongating, hardening, and compressing the shanks of such blanks by cold-rolling from the head to the point, thereby giving to all parts of the nail so produced the peculiar qualities specified.

A. M. POLSEY.

Witnesses:

J. B. CROSBY,
F. GOULD.